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Aggregating Evidence Across COVID-19 Randomized Clinical Trials

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Many authors (Bassi & Hwenda, 2020; Bauchner & Fontanarosa, 2020; Dean et al., 2020; Eichler et al., 2020; Gates, 2020; Glasziou, 2020; London & Kimmelman, 2020; Norrie, 2020) have emphasized the need for data-sharing, collaboration, and the use of core protocols in order to develop reliable evidence about benefits and harms of potential treatments for COVID-19 through randomized clinical trials (RCTs). Coordination across RCTs is crucial to ensure that evidence for the treatment and prevention of COVID-19 is adjudicated and disseminated as quickly and reliably as possible. In the absence of coordination, false positives from underpowered and uncoordinated collections of redundant trials could fuel the proliferation of ineffective and potentially dangerous treatments.

The COVID-19 Collaboration Platform (CovidCP; https://covidcp.org) is a joint venture initiated by researchers across North American institutions, leadership of NIH's Trial Innovation Network and SMART IRB, and collaborators in Europe to facilitate global collaboration among COVID-19 RCTs. CovidCP is a repository for RCT protocols whose principal investigators are open to various levels of collaboration. Principal investigators who submit their draft or completed protocols are encouraged and, importantly, provided support to:

- Initiate new multi-site trials;
- Work with other research teams to create a collaborative protocol that can be used at multiple sites but as independent studies;
- Admit new research sites under the existing trial and IRB;
- Share anonymized interim and/or final data with other sites that choose to conduct a trial under a similar but not identical protocol; and
- Collaborate on data collection tools, data standards, and case report forms.

In the US, the Trial Innovation Network and SMART IRB will prioritize and expedite requests to initiate multi-site studies received through this platform. Volunteer statisticians with expertise in adaptive and multi-site clinical trials will work with study- and domain-specific Data Monitoring Committees to ensure that any interim analyses meet standards for best statistical practice, ethics, and maximal informativeness outlined in Dean et al. (2020).

Organizing multi-site RCTs and, where that is not possible, combining data from separate but similar trials, will produce answers faster and more precisely than conducting each trial independently. We believe that every patient participating in an RCT has the right to have their data used as efficiently and meaningfully as possible, and CovidCP can help researchers make full use of data even from trials that are stopped early due to a change in standard of care or local epidemic waning, trials that are small and possibly underpowered, and single-arm trials.

We trust that CovidCP will help the clinical research community to share their work and knowledge in the service of developing all possible tools for fighting this pandemic. Furthermore, we hope that a cooperative platform such as CovidCP will remain in place for future global health emergencies.

References

Bassi LL, & Hwenda L (2020). COVID-19: time to plan for prompt universal access to diagnostics and treatments. The Lancet Global Health.

Bauchner H, & Fontanarosa PB (2020). Randomized Clinical Trials and COVID-19: Managing Expectations. JAMA.

Brodwin E and Robbins R (2020, April 23). 'It's noisy': Competing Covid-19 efforts could hamper progress, experts warn. Stat News.

Christley RM (2010). Power and error: increased risk of false positive results in underpowered studies. The Open Epidemiology Journal, 3(1).

Dean NE, Gsell PS, Brookmeyer R, Crawford FW, Donnelly CA, Ellenberg SS, … & Krause PR (2020). Creating a Framework for Conducting Randomized Clinical Trials during Disease Outbreaks. The New England Journal of Medicine, 382 (14), 1366. [PubMed: 32242365]

Eichler H, Cavaleri M, Enzmann H, Scotti F, Sepodes B, Sweeney F, Vamvakas S, and Rasi G (2020). Clinical trials for Covid-19: can we better use the short window of opportunity? Clinical Pharmacology and Therapeutics. 10.1002/cpt.1891

Gates B (2020). Responding to covid-19—a once-in-a-century pandemic. The New England Journal of Medicine. 10.1056/NEJMp2003762.

Glasziou P (2020). Waste in covid-19 research. The BMJ, 369:m1847 [PubMed: 32398241]

London AJ and Kimmelman J (2020). Against pandemic research exceptionalism. Science, DOI: 10.1126/science.abc1731.

Norrie JD (2020). Remdesivir for COVID-19: challenges of underpowered studies. The Lancet. 395(10236), pp. 1525–1527.